

CLAIMS

What is claimed is:

1 1. A method for preparing a rubber modified asphalt, said method comprising the
2 steps of:

3
4 a. combining i) asphalt, ii) rubber or RPVR and iii) at least one dodecyl or
5 tridecylbenzene sulfonic acid; and

6
7 b. heating and/or mixing the components combined in Step A to form a
8 rubber modified asphalt.

1 2. A method according to Claim 1 wherein the dodecyl or tridecylbenzene sulfonic
2 acid is linear.

1 3. A method according to Claim 1 wherein the dodecyl or tridecylbenzene sulfonic
2 acid is branched.

1 4. A method according to Claim 1 wherein Step B comprises applying moderate
2 heat.

1 5. A method according to Claim 1 wherein the components are heated to a
2 temperature in the range of about 225° to about 450° F during Step B.

1 6. A method according to Claim 5 wherein the temperature during Step B is about
2 350° F.

1 7. A method according to Claim 1 wherein the in the at least one dodecyl or
2 tridecylbenzene sulfonic acid comprises DDBSA.

1 8. A method according to Claim 1 wherein Step A comprises initially combining
2 asphalt at least one dodecyl or tridecylbenzene sulfonic acid with heat and/or mixing

3 and then subsequently adding rubber or RPVR to the mixture.

1 9. A method according to Claim 1 wherein Step A comprises combining asphalt,
2 crumb rubber and at least one dodecyl or tridecylbenzene sulfonic acid.

1 10. A method according to Claim 9 wherein the crumb rubber will pass through a
2 #9 U.S. series sieve.

1 11. A composition comprised of an asphalt, RVPR and at least one dodecyl or
2 tridecylbenzene sulfonic acid (SA).

1 12. A composition according to Claim 11 where, based on weight, the asphalt is
2 from about 65 to about 98 percent, the RVPR is from about 1 to about 25 percent,
3 and the SA is from about 1 to about 10 percent.

1 13. A composition according to Claim 11 where the RVPR is at least minus 4
2 mesh.

1 14. A composition according to Claim 11 where the SA is a BAS or a LAS.

1 15. A composition according to Claim 11 where the SA is DDBSA.

1 16. A composition according to Claim 11 further comprising aggregate or an
2 aggregate containing composition.

1 17. A method for making RMAC comprising combining at least one of (1)
2 asphalt and RVPR, or (2) a blended mixture of asphalt and RVPR, with at least
3 one dodecyl or tridecylbenzene sulfonic acid (SA) in the presence of moderate
4 heat for an amount of time sufficient to cause at least one of (1) an increase in
5 hardness (2) an increase in softening point, or (3) an improvement in recovery from
6 deformation, in the resulting admixture of RMAC.

- 1 18. A method according to Claim 17 wherein the SA is a BAS or a LAS.
- 1 19. A method according to Claim 17 wherein the SA is DDBSA.
- 1 20. A method according to Claim 17 wherein the unblended RVPR has a mass
2 of about minus 4 or less.
- 1 21. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated at about 225° to about 450° F. (ca. 107° C. to about 232° C.).
- 1 22. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated to about 350° F.
- 1 23. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 heated for about 1 - 2 hours.
- 1 24. A method according to Claim 17 wherein the asphalt-RVPR-SA mixture is
2 stirred while being heated.
- 1 25. A method for improving at least one of (1) the softening point, (2) the
2 hardness, or (3) the recovery from deformation of a RMAC composition comprising
3 adding at least one dodecyl or tridecylbenzene sulfonic acid (SA), in the amount of
4 from about 1 to about 10 percent, W/W, to the RMAC in the presence of moderate
5 heat for about 1 - 4 hours.
- 1 26. A method according to Claim 25 wherein the moderate heat comprises
2 temperatures of about 2250 to about 4500 F.
- 1 27. An RMAC composition made by the method of Claim 25.
- 1 28. An RMAC composition made by the method of Claim 26.